

## **AMENDMENTS TO THE CLAIMS**

The listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Original) An apparatus for eddy current inspection, the apparatus comprising:

an induction probe having an input operative to receive a train of pulsed electrical packets, a cluster of pulses being superimposed on each packet; and

wherein each pulse in the cluster of pulses has an amplitude that is proportional to an instantaneous amplitude of a major wave associated with the train of pulsed electrical packets, and wherein each pulse in the cluster of pulses has a frequency that is proportional to an instantaneous frequency of the major wave associated with the train of pulsed electrical packets.

2. (Original) An apparatus for eddy current inspection, the apparatus comprising:

an induction probe operative to emit a magnetic field corresponding to a train of pulsed packets, a cluster of pulses being superimposed on each packet; and

wherein each pulse in the cluster of pulses has an amplitude that is proportional to an instantaneous amplitude of a major wave associated with the train of pulsed packets, and wherein each pulse in the cluster of pulses has a frequency that is proportional to an instantaneous frequency of the major wave associated with the train of pulsed packets.

3. (Original) A method for eddy current inspection, the method comprising:  
generating a train of pulsed electrical packets, a cluster of pulses being superimposed on each packet, wherein each pulse in the cluster of pulses has an amplitude that is proportional to an instantaneous amplitude of a major wave associated with the train of pulsed electrical packets, and wherein each pulse in the cluster of pulses has a frequency that is proportional to an instantaneous frequency of the major wave associated with the train of pulsed electrical packets;

inputting the train of pulsed electrical packets to an electromagnetic induction circuit, the electromagnetic induction circuit emitting a magnetic field in response to the inputting;

using the magnetic fields to induce eddy currents in a material; and

detecting the eddy currents in the material.

4. (Original) A method for eddy current inspection, the method comprising:  
generating a magnetic field corresponding to a train of pulsed packets, a cluster of pulses being superimposed on each packet, wherein each pulse in the cluster of pulses has an amplitude that is proportional to an instantaneous amplitude of a major wave associated with the train of pulsed electrical packets, and wherein each pulse in the cluster of pulses has a frequency that is proportional to an instantaneous frequency of the major wave associated with the train of pulsed packets;  
using the magnetic fields to induce eddy currents in a material; and  
detecting the eddy currents in the material.
5. (New) An apparatus for eddy current inspection, the apparatus comprising:  
an induction probe to receive a superlooped waveform measurement signal.
6. (New) The apparatus of claim 5, wherein the superlooped waveform measurement signal comprises a train of pulsed electrical packets, each packet comprising a cluster of pulses superimposed on each packet.
7. (New) The apparatus of claim 6, wherein the train of pulsed electrical packets comprises at least one group of packets at a first concentration and at least a second group of packets at a second different concentration.
8. (New) The apparatus of claim 6, wherein each cluster of pulses comprises at least one pulse at a first frequency and amplitude and at least another pulse at a different frequency and amplitude.